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23. A method according to claim 22, wherein the hydrocarbons are selected from the group consisting of octane, decane and dodecane.

24. A method according to claim 22, wherein the chlorinated hydrocarbon is 1, 2-dichlorethane.

25. A method according to claim 22, wherein the ether is ethylether.

26. A method according to claim 12, wherein the surfactants are selected from the group consisting of trioctylmethyl ammonium chloride (aliquat 336), dioctyldimethylammonium bromide (DDAB), cetyltrimethylammonium chloride (CTAB), sodium bis-(2-ethyl-hexyl)-sulfosuccinate; and poly-ethoxyethylene-10-oleyl ether.

27. A method according to claim 12 wherein metal oxides and metal precursors are selected from the group consisting of triethoxy silanes (TEOS); trimethoxy silane (TMOS); Al, Zr isopropoxides; Fe, Mg and Al chlorides; Al and Mg acetates; Na and K orthosilicates; Zr oxychloride and transition metal salts of Fe, Co, Ni, Cu, Ru, Rh, Pd, Ir and Pt.

28. A method according to claim 12, wherein the polymers are selected from the group consisting of polyethylene oxide (PEO); polyvinyl chloride (PVC); polyvinyl alcohol (PVA); and polymethyl methacrylate (PMMA).

29. A method according to claim 17, wherein the reducing agent is selected from the group consisting of sodium formate; hydrogen; and alcohol.

30. A method according to claim 29 wherein the alcohol is selected from the group consisting of methanol, ethanol, and isopropylalcohol.